

Table of species :

- a.—Antennal projection of the front very short ; first joint of antennae nearly as long as last two together.....* *signifera*.
—Antennal projection nearly as long as first joint of antennae, the latter scarcely longer than the second joint.
- b.—Second, third and fourth segments of abdomen each with two yellow spots and posterior margin.....* *pictula*.
—Abdomen without such spots, banded.
- c.—Second segment of abdomen much shorter than the third ; front of female black with yellow spots.....*abbreviata*.
—Second segment of abdomen nearly as long as third ; front of female yellow below, black above.....*tridens*.

CERIA TRIDENS Lw., Cent. x, 57. Loew's description applies very well to a single male specimen from Southern California, except that the cheeks are wholly black, and the hind tarsi yellow at the base. Other specimens from Washington Territory, however, that are apparently of the same species, have the anterior and middle femora black, except the extreme tips, the posterior black, except at the base, the tibiae fuscous near the outer ends, one of the pleural spots and the supra-alar vittula entirely wanting. The female differs in the front being black on the upper two thirds ; the second and third segments of the abdomen strongly marked with whitish pollen, and the legs almost wholly yellow, the anterior femora being blackish in front, the posterior lightly fuscous near the tip. A female *abbreviata* taken with a male at New Haven, has its legs yellow also with fuscous markings of the femora ; the front is black with four small yellow spots.

Stated Meeting, June 16, 1882.

Present, 4 members.

President, Mr. FRALEY, in the Chair.

A letter accepting membership was received from C. E. Rawlins, dated Rockmount, Ramhill, England, May 12, 1882.

Mr. P. H. Law accepted his appointment to prepare an obituary notice of the late Mr. Vaux, by letter dated May 23, 1882.

A request for exchanges (to be dated back at least to 1875) was received from the Société Zoologique de France, No. 7 Rue des Grands Augustins, Paris, in a letter dated May 27, and signed H. Pierson, Sec. Adjt. On motion the Librarian was

directed to send full sets of Proceedings and Transactions to the Society.

A request for exchanges was received from the Leander McCormick Observatory of the University of Virginia. Action postponed.

A letter of envoy was received from Dr. B. A. Gould, Cordova.

Letters of acknowledgment were received from the Public Library of N. Bedford (110); the R. Institution, London (109), and the Wyoming Historical and Geological Society (75, 77, 88, 99).

Donations for the Library were received from the Mining Surveyors at Melbourne; Prague Observatory; Dr. A. Tischner, Leipsig; Dr. G. D. E. Weyer in Kiel; Turin Academy; Academia dei Lincei; Geographical Societies in Paris and Bordeaux; London Astronomical Society; London Nature; British Topographical Society; Mr. Chas. Edward Rawlins, Jr.; R. Geological Society of Cornwall; Boston Natural History Society; Middlesex Institute; American Journal of Science; American Museum of Nat. History; Chas. W. Shields, D.D.; Buffalo Young Men's Association; New Jersey Historical Society; Philadelphia Academy Natural Sciences; Zoölogical Society; Engineers' Club; Journal of Pharmacy; Mr. H. C. Lewis; American Pharm. Association; Penna. Magazine; American Chemical Journal; American Journal of Mathematics; Peabody Institute; U. S. National Museum; Fish Commission; G. M. Wheeler (U. S. Geographical Surveys); University of Virginia; Missouri Historical Society; Ministerio de Fomento; Revista Mexicana; Observatory at Cordova (B. A. Gould); American Philosophical Association.

The death of W. B. Rogers, at Boston, May 30, aged 77, was reported by the Secretary; and Dr. R. E. Rogers was appointed to prepare an obituary notice of the deceased.

The following communications were made:

"Revision of the Dermestidæ of the United States," by Horace F. Jayne, M.D., with 4 plates.

"Radiant Heat an Exception to the Second Law of Thermodynamics;" by H. T. Eddy, Ph.D., University of Cincinnati.

Pending nominations Nos. 959, 960, 961, and new nominations Nos. 962, 963 were read.

C. G. Ames was appointed by the President in the place of the late S. W. Roberts as a member of the Committee on the Hall.

And the meeting was adjourned.

Radiant Heat an Exception to the Second Law of Thermodynamics.
By H. T. Eddy, Ph.D., University of Cincinnati.

(Read before the American Philosophical Society, June 16, 1882.)

Since the radiation of heat takes place by propagation through space at a certain finite velocity and not instantaneously, it is quite possible for occurrences to intervene during the exchange of radiations between two bodies such as to essentially change the distribution of heat which would otherwise have ultimately taken place.

To make this evident, let us employ first a mechanical analogy. In the accompanying figure, let there be three parallel screens, a , b and c , the latter between the two former and all three perpendicular to the plane of the paper. Let them be pierced respectively by series of equidistant apertures $a_1 a_2 \dots a_n$, $b_1 b_2 \dots b_n$, $c_1 c_2 \dots c_n$, situated in the plane of the paper, and let these apertures be so placed that $a_1 b_1 c_1$ are upon one straight line, not quite at right angles to the screens; then are $a_2 b_2 c_2$, etc., and $a_n b_n c_n$ upon lines parallel to $a_1 b_1 c_1$. Now conceive the screens $a b c$ to have a common uniform velocity u in the direction from the c_2 to c_1 .

Also let a series of projectiles be discharged from any fixed position A at the left of the screen a at such instants as to pass the first one through the aperture a_1 , the second through a_2 , etc., and let the direction of discharge be perpendicular to the screens, and the velocity v such that each one shall just reach the screen b in time to pass through the first aperture of that screen which crosses its path. Then would the screens $a b c$ in no way interfere with the passage of these projectiles. Let us denote the space at the left of a as the space A , and that at the right of b as the space B . Then if there be a continuous discharge of projectiles from all points of the space B , only a part of them can pass through the apertures of a . Such however as succeed in passing a will pass b and c also.

Again, let a second discharge of projectiles take place from the space B but directed toward the left perpendicularly to the screens, so that these projectiles move in a precisely opposite direction from those first mention-